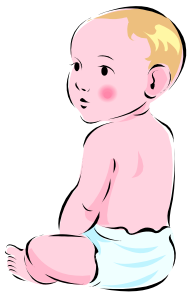

DYDEE DYPER SERVICE

Background

After 59 years in business, Dydee is New England's largest diaper service. The 85-employee Dorchester-based firm washes about 200,000 pounds of linen and diapers per week in its 18 chamber, continuous-batch tunnel washer, which consumes only a fourth to a fifth of the water used by conventional washers. One drawback of this kind of water conservation is that it increases the concentration of wastewater contaminants, giving rise to potential compliance difficulties. In Dydee's case, zinc concentration levels have been consistently above the permitted limit of 1 part per million (ppm) set by the Massachusetts Water Resources Authority (MWRA). This situation came to a head in late January of 1992, when the MWRA cited Dydee for violating zinc discharge limits. The violation was reported by Channel 5 on its nightly newscast. Over the next day, Dydee handled telephone calls from scores of concerned customers, many of whom had chosen to use cloth diapers precisely because they were concerned about the environment. Since some customers were discontinuing their service due to adverse publicity, Dydee chose to take a more proactive approach to its zinc compliance difficulties.

Discussion

Your group is comprised of employees of the Dydee Diaper Company who have been given the responsibility of solving the zinc discharge problem in the most cost-effective manner, while maintaining customer satisfaction.

There are three alternatives to solving the problem.

1. Install a conventional pretreatment system at the plant. This will cost between $150,000 and $200,000 to install and between $25,000 and $35,000 pre year to operate. Since this kind of pretreatment equipment would have to be tended by a licensed operator, it would also give rise to new training and/or salary expenses.
2. Invest in closed-loop ozone-activated laundering equipment, thus eliminating water discharges altogether. Research has indicated that while this new technology is not yet ready for application to diaper services, it may well meet the company's needs within 5-10 years. Because of the possibility of this technology, investing in a treatment system might not be a great idea.
3. Search for the source of the zinc and eliminate it there.

Refer to the process flow diagram to help you determine where the zinc is originating. Come up with a plan to eliminate the discharge problem.

Once a solution has been determined, be prepared to discuss it with the large group.